

U.S. NUCLEAR REGULATORY COMMISSION
REGION III

Report No. 040-08724/94002 (DRSS)

Docket No. 040-08724

License No. SUB-1357

Licensee: Chemetron Corporation
2100 New River Center
200 East Las Olas Boulevard
Fort Lauderdale, FL 33301

Inspection At: Bert Avenue Vacant Lot (Parcel No. 51106063)
Newburgh Heights, Ohio

Inspection Conducted: May 12, 1994

Inspection By: William G. Snell 6/7/94
William G. Snell Date
Senior Radiation Specialist

Approved By: William G. Snell for 6/7/94
George M. McCann, Chief Date
Fuel Facilities and
Decommissioning Section

Inspection Summary

Inspection on May 12, 1994 (Report No. 040-08724/94002(DRSS))

Areas Inspected: This was a special announced inspection to observe the removal of a small area of depleted uranium contamination in excess of NRC unrestricted use criteria at a vacant lot in the residential area which borders the licensee's Bert Avenue Site.

Results: Licensee personnel removed a portion of the contaminated material, but because the extent of the contaminated material exceeded expectations, work was halted for additional evaluation. Most of the material removed measured 400 to 1200 counts per minute (cpm). A single piece of material was removed which measured in excess of 10,000 cpm. The excavation was lined with plastic and backfilled with clean soil. Surface measurements indicated a maximum of 120 cpm after backfilling. Background is approximately 50 cpm.

DETAILS

1. Persons Contacted

Darin McEleney, Senior Radiation Technician, B. Koh and Associates, Inc.
Paul Johnson, Senior Health Physicist, B. Koh and Associates, Inc.

2. Background

Chemetron Corporation holds License No. SUB-1357 originally issued on June 12, 1979, by the Nuclear Regulatory Commission (NRC) authorizing possession of depleted uranium for purposes of decommissioning. The license is continuing in effect since its last license renewal application on October 1, 1990. The license authorizes material at the original factory site (Harvard Avenue) and at a landfill (Bert Avenue) where material was placed during decontamination efforts in the 1970's. The original license (SUB-852), issued on October 8, 1965, authorized Chemetron, through its McGean Unit of the Inorganic Chemical Division, to manufacture catalysts containing depleted uranium. No activities involving source material, other than decontamination, have been conducted at the sites since Chemetron discontinued production of the catalyst in February 1972. In addition, McGean-Rohco, Inc. is in possession of depleted uranium in the form of contamination on buildings, equipment and land at a property (the McGean Site) located immediately east of the Harvard Avenue Site. The Chemetron Corporation has gone through several reorganizations involving internal and vendor decontamination programs since 1972. Chemetron submitted their remediation plan to NRC in October 1993, which is currently being reviewed.

3. Description of Event

On September 17, 1993, NRC was notified by the law firm of Ulmer and Berne, that their consultant identified an area in a vacant lot with radioactive material. This was identified during a radiological survey of residences in the vicinity of the Chemetron Bert Avenue site. The vacant lot, on Bert Avenue, borders the southeast section of the Bert Avenue site. According to the consultant, the radioactive material was identified as depleted uranium with a U-238 concentration of 1283 pCi/g (47 Bq/g) in soil. The regulatory limit for depleted uranium in soil is 35 pCi/g (1.3 Bq/g) and is found in NRC Branch Technical Position, "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations" (46 FR 52061, October 23, 1981). The radioactive material likely came from the Bert Avenue Site, due to the close proximity of this lot to the site.

A radiological scoping survey of the vacant lot (Parcel No. 51106063) was conducted by the NRC on September 20, 1993 (Inspection Report No. 040-08724/93003(DRSS)). Surface scans of the vacant lot identified a location with elevated measurements in excess of background measurements. The location was the same as the location identified by

the consultant and measured 1000 counts per minute (cpm) on contact with the soil. After removing a soil sample, the location measured 700 cpm on contact. A three to four foot diameter area surrounding the location had measurements ranging from 150 to 500 cpm. The exposure rate measurement taken at one meter above the contaminated location was indistinguishable from background. Background is approximately 50 cpm.

4. Inspection Results

The licensee's intended scope of work was to remove a small area of soil (to a depth of 6 to 12 inches) that was contaminated with depleted U-238. Prior to commencing work, licensee personnel set up two air samplers downwind of the area where material was to be removed and donned appropriate protective clothing. The licensee then proceeded to remove contaminated soil using shovels, transferring the contaminated material to buckets and then to a 55 gallon drum. Surveys of the soil and other debris dug up were performed throughout the work.

Surveys indicated that contamination levels of the soil being removed ranged from 400 to 1200 cpm. The bulk of the contamination was located at a depth of 6 to 8 inches and continued to spread out horizontally. As digging progressed, a single piece of metal was removed from the hole that measured over 10,000 cpm. Once the hole reached a dimension of approximately two feet by five feet, work was stopped. It was determined that the area of contamination was larger than originally anticipated and re-evaluation was warranted before continuing. The hole was refilled with the clean material that had been removed and covered with two large stumps. Independent measurements by the inspector were in agreement with the licensee's measurements.

The inspector informed the owner of the vacant lot of the results of the work performed immediately following completion of the work on May 12, 1994.

Followup communications with the licensee representatives indicated that they continued to remove contaminated soil on May 13, 1994. After removing an additional two cubic feet of contaminated soil, work was again stopped. At this point, the licensee believed the objective of removing the surface contamination had been achieved. The hole was surveyed, plastic was laid over the area and the hole was filled with clean soil. After filling the hole, licensee surveys indicated a maximum surface activity of 120 cpm.